

Abstract

Techniques are provided for the addition and comparison operations associated with a Viterbi decoding algorithm at substantially the same time. To this end, an operation of the type $a \pm b > c \pm d$ (where a and b are to be added, c and d are to be added, and then the sums compared to determine the larger of the two sums) can be formulated, in accordance with the invention, into $a \pm b - c \mp d > 0$ (where the addition of a and b and of c and d , and their comparison, are substantially concurrently performed). More specifically, in order to facilitate substantially concurrent addition and comparison operations in a Viterbi decoder, in one embodiment, the present invention performs multi-operand addition in a carry save form. With the results of addition represented in carry save form, the evaluation of comparator conditions is relatively straightforward.